

and the prominence of the yellow and blue bands at the minimum epoch is in the main the result of the greater contrast on a darker ground. But this does not appear to be enough to account for the strength of the brightest of the blue bands, and fails completely to explain the great extension of the bright H_{γ} band.

Whatever, therefore, be the cause of dimming the white light of the star at its minimum brightness, it does not in proportion stop its gaseous radiation.

Stonyhurst College Observatory: 1901 April 7.

Observations of the New Star in Perseus made at the Radcliffe Observatory, Oxford.

*(Communicated by Arthur A. Rambaut, M.A., Sc.D., F.R.S.,
Radcliffe Observer.)*

This paper is a continuation of one published in the last number of the *Monthly Notices* (pp. 348–354). It contains the results of the observations of the brightness of *Nova Persei* made at the Radcliffe Observatory since the date of the last meeting of the Society.

The estimates of brightness have been made as described in the previous paper, but the comparison stars used in these observations are situated in the immediate neighbourhood of the Nova, being all contained within the constellation Perseus. In making the comparisons, as the brightness of the star diminished, recourse was had from time to time to telescopic aid with apertures of from $1\frac{3}{4}$ in. to 10 in., as indicated in the notes.

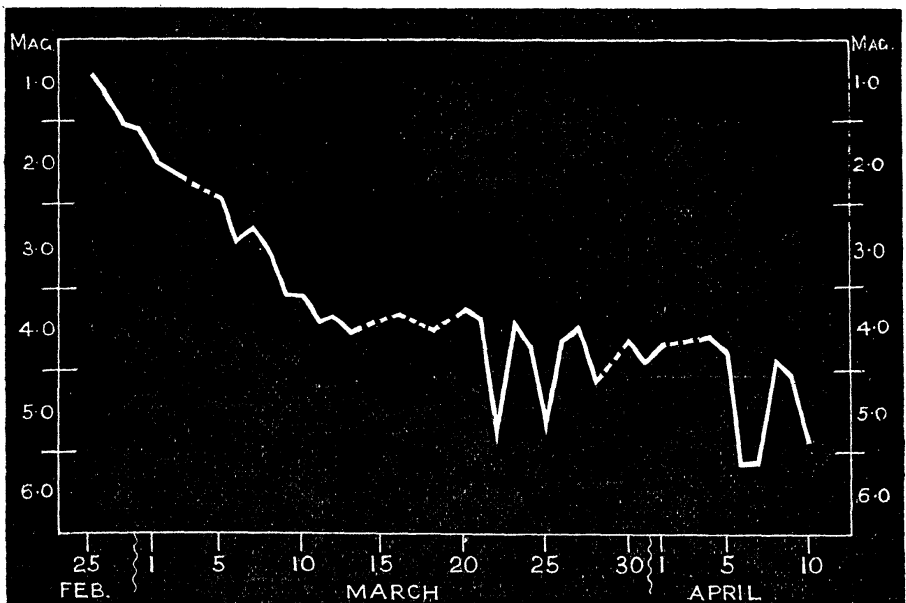
In Table I. below are given a number for reference, the names of the stars used, and the Harvard magnitudes on which our estimates are based.

Table II. contains the means of each observer's separate comparisons and the general mean for each night.

The results of our observations made since the discovery of the star are graphically represented in the accompanying figure. This diagram exhibits very clearly the variation in the brightness of the star noticed by von Glasenapp and Dunér, and corroborates the period of three days found by them. Thus we have four successive minima taking place on March 22, 25, 28, and 31, and after a cloudy interval we have two more on April 6 or 7 and 10.

A comparison of the notes on the colour of the star with the variation in its brightness seems to indicate some relation between these two phenomena, and suggests that a diminution of light is accompanied by an increase in the redness of the

star. Thus on March 21, when the star was near one of its maxima, the light is described as having "a stronger yellow tinge than when last seen." On March 25, one of the minima, the Nova is noted as "very red to-night." At the next maximum,



Magnitudes of *Nova Persei*.

March 26, the colour is described as "red with yellowish tinge." It must be admitted, however, that the observations of March 27 and 28 hardly support this view, but, on the other hand, those of March 30, April 8, and April 10 point in the same direction.

TABLE I.

List of Stars used for Comparison with Nova Persei.

Ref. No.	Name of Star.	Harvard Photom. Mag.	Ref. No.	Name of Star.	Harvard Photom. Mag.
29	ϵ Persei	3.04	45	ι Persei	4.14
30	γ Persei	3.11	46	θ Persei	4.24
31	δ Persei	3.18	47	ψ Persei	4.24
37	η Persei	3.93	48	σ Persei	4.39
38	ζ Persei	3.10	49	λ Persei	4.54
39	ρ Persei (Var.)	3.68	50	l Persei	4.84
40	κ Persei	3.95	51	31 Persei	4.99
41	τ Persei	3.97	52	30 Persei	5.37
42	ν Persei	4.00	53	36 Persei	5.40
43	$\circ$ Persei	4.01	54	Arg: Z + 44°, 734	6.04
44	ξ Persei	4.06	55	Arg: Z + 44°, 648	6.47

[(Revision of D.M.)]

TABLE II.

Means of Estimations of Magnitude of Nova Persei.

1901	G.M.T.	Observer.	Reference Stars.	Mean Mags.	Adopted Magnitude for the Night.
	h m				
Mar. 8	8 30	R.	29, 31	3.10	3.10
	9	8 53	R.	42, 29, 40, 42, 29, 31	3.61
		9 5	W.	31, 30, 42, 37	
		9 25	A.A.R.	30, 29, 38, 42, 39, 40, 43, 44, 45, 46	
		10 30	C.	31, 29, 42, 40, 30	
	10	8 7	W.	30	3.60
		9 0	R.	40, 42	
		10 0	C.	31, 29, 40, 42	
	11	10 45	R.	42, 40	3.93
	12	10 45	R.	31, 29, 42	3.87
	13	7 45	R.	45, 42, 40	4.03
	16	8 28	R.	45, 42, 40, 46, 31	3.83
		9 0	W.	37, 30, 42, 40	
	18	11 0	R.	40, 42	4.00
	20	9 0	R.	42, 40, 31, 30, 46	3.74
	21	7 45	C.	42, 40, 31, 30	3.91
		7 50	W.	42, 40, 37, 41	
		8 20	W.	41,* 37,* 40,* 42*	
		8 35	R.	42, 40	
		10 45	C.	31, 29, 30, 42, 40	
		11 0	R.	42, 40, 45, 46	4.00
	22	7 50	R.	50	5.20
	23	8 0	R.	42, 40, 42, 31, 31	3.92
		8 15	C.	42, 40	
	24	8 30	R.	42, 40	4.20

* Stars used for telescopic comparisons.

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1901	G.M.T. h m	Observer.	Reference Stars.	Mean Mags.	Adopted Magnitude for the Night.
Mar. 25	7 55	R.	50, 52	5.15	5.15
	9 0	C.	—	5	
26	8 35	R.	40, 42, 50	4.20	4.12
	9 45	C.	40, 42	4.20	
	11 20	W.	42, 37, 42*	4.03	
27	7 40	R.	42, 40	3.95	3.98
	8 30	W.	37, 41, 40, 42	3.98	
	8 40	W.	42,* 40,* 37*	3.80	
	10 30	R.	42, 40	4.15	
	12 0	R.	40, 42	4.15	
28	8 15	W.	47, 48	4.30	4.61
	8 15	R.	50, 42, 40	4.73	
	8 30	C.	40, 50	4.60	
	8 50	W.	47, 48	4.55	
	9 0	R.	50, 42, 40	4.83	
	9 10	W.	42,* 40,* 47,* 48,* 51*	4.48	
30	6 30	R.	42,* 40*	4.15	4.14
	8 30	W.	42, 40, 48, 47	4.18	
	9 0	C.	42, 40	4.20	
	9 0	R.	42, 40	4.15	
	9 47	R.	42, 40, 45, 46	4.00	
	10 36	R.	42, 40	4.20	
	11 30	R.	42, 40	4.20	
31	8 30	R.	42, 40, 50	4.40	4.40
Apr. 1	7 30	R.	42,* 40*	4.00	4.19
	8 0	R.	42, 40, 45, 46	4.18	
	12 9	R.	42, 40	4.30	
	12 24	R.	42, 40	4.20	
4	8 15	R.	42, 40, 45, 46	4.08	4.08

1901	G.M.T.	Observer.	Reference Stars.	Mean Mags.	Adopted Magnitude for the Night.
	h m				
Apr. 5	8 35	R.	42,* 40,* 50,* 52*	4.28	4.28
6	9 45	C.	54,* 50*	5.60	5.60
7	8 40	R.	52, 54, 50	5.60	5.60
8	9 30	R.	42, 40, 50	4.43	4.40
	9 45	W.	42, 40, 47, 48, 40,* 50*	4.36	
	10 15	C.	42, 40, 50	4.50	
9	8 30	R.	42, 40, 50	4.50	4.57
	10 15	W.	48, 50	4.60	
	10 15	C.	42, 40, 50	4.63	
10	8 15	W.	47,* 48,* 42*, 40*, 50*, 52*	5.17	5.33
	9 10	R.	53, 54, 30	5.47	
	9 45	C.	50*	5.34	

Observers' Notes on the Estimations of Magnitudes.

March 10. Clouds passing, hazy (W.) Cloud and mist; observation rough (R). Misty. $\frac{1}{2}$ wt. to 40 and 42 (C.)

March 11. Very misty. $\frac{1}{2}$ wt. to 40.

March 12. Cloud and mist at times.

March 18. Rather doubtful. Clouds passing.

March 21. Nova fluctuates in brightness (C.) At 11^h 0^m Nova sensibly fainter than at 8.35 (R.)

March 22. Observed in breaks of cloud.

March 23. Observed in transient break (C.)

March 24. Observed in breaks of cloud and haze.

March 26. Nova at times momentarily equal to 40 and 42 (C.)

March 27. Nova at 12^h 0^m fainter, I think, than at 7^h 40^m (R.)

March 28. 42 brighter than 40 to-night (C.) Bright moonlight. Images sharp in the 1 $\frac{3}{4}$ -inch (W.)

March 30. Daylight observation at 6^h 30^m (R.) Cloudy; $\frac{1}{4}$ wt. to 48; $\frac{1}{2}$ wt. to 47 (W.)

April 5. Sky hazy.

April 6. Hurried observation in brief but clear interval.

April 7. Very clear for a short interval.

April 8. $\frac{1}{2}$ wt. to 50* (W.)

April 9. Nova estimated as 0.2 fainter than last night at the same G.M.T. (W.)

General Note.—In the above comparisons it was noted that 42 (ν Persei) and 40 (κ Persei) gave slightly discrepant magnitudes for Nova Persei. Comparing the magnitudes of these two stars with a number of those given in Table I., their magnitudes were determined to be 3.90 and 4.01 respectively. The magnitudes given in the Harvard Photometry for these stars are 4.00 and 3.95. The Radcliffe estimations agree more closely with the magnitudes given in the Revision of the Harvard Photometry, viz. 3.90 and 4.07.

Observers' Remarks on Colour of Nova and Comparison Stars.

March 8. Very red to the naked eye (R.)

March 16. In Ramsden $2\frac{1}{4}$ -inch 42 is bluish-white, in strong contrast to Nova, very red. I should consider a comparison between these stars to be much affected by the diversity of colour. In Barclay "Finder" Nova is very red. In the 10-inch, using power 90, very red; and with 4-inch diaphragm over the object-glass also very red (W.) Nova in Barclay is very red (C.)

March 21. Marlborough $3\cdot2$ -inch. Definition exceptionally good. 42 is bluish-white, difficult to compare with Nova. With Barclay, power 80, the Nova is red, but its colour seems to have a stronger yellow tinge than when last seen by me in this telescope (W.)

March 25. Nova very red to-night in Barclay (R.)

March 26. Nova red with yellowish tinge in $1\frac{3}{4}$ -inch telescope (W.)

March 27. In Marlborough telescope Nova red and disc sharp with diffraction rings. 37 is also a red star, but not nearly so darkly tinted as the Nova. This redness may account for slight differences between naked-eye and telescopic views of the stars. In Barclay, with power 90, Nova very red; its red tint has increased since I last saw the star with this instrument. Sky misty and moonlight rather strong (W.) Very red in Barclay (R.)

March 28. Nova yellowish red in $1\frac{3}{4}$ -inch telescope, power 20 (W.)

March 30. Barclay equatorial, power 45. I was much struck with the absence of colour in Nova (R.) The Nova is not nearly so red in the Barclay instrument as it was on March 16 (C.)

April 8. With $1\frac{3}{4}$ -inch telescope and power 20. Nova is still red, with yellowish light in centre of image; 40 is bluish-white and 14 is white (W.)

April 10. Nova, in $1\frac{3}{4}$ -inch telescope and using power 20, is red and 40 is yellow. In "Finder" of Barclay, Nova is very red and has a central yellow disc. With the 10-inch and power 90 this central yellow disc and the deep ruby-red flames around it are proportionately magnified (W.)

The observers were—Dr. Rambaut, indicated by A.A.R.

Mr. Wickham	„	„	W.
Mr. Robinson	„	„	R.
Mr. McClellan	„	„	C.

Radcliffe Observatory, Oxford:
1901 April 11.

Note on Meridian Observations of Nova Persei.
By A. Graham, M.A.

(Communicated by the Secretaries.)

The position of *Nova Persei* as deduced from observations with the Cambridge Transit Circle was as follows :—

1901.	App. R.A.	Mean R.A. Jan. 1.	App. Decl.	Mean Decl. Jan. 1.
	h m s	h m s	° ' "	° ' "
Feb. 25	3 24 29.882	3 24 28.222	43 34 3.85	43 33 54.25
28	29.524	27.934	4.08	54.74
Mar. 1	29.784	28.217	3.40	54.15
2	29.529	27.985	2.93	53.77
3	29.619	28.098	3.06	54.01
5	29.527	28.051	3.70	54.85
7	29.605	28.172	2.53	53.89
12	29.344	28.019	2.88	54.81
21	29.269	28.120	0.78	53.88
Apr. 1	29.114	28.107	43 33 59.59	54.29
Mean 3 ^h 24 ^m 28 ^s .092 ± ^s .065. 43° 33' 54" 26 ± " 27.				

Notes.

February 25. Through clouds. Estimated 1st mag. February 28. Disturbed by knocking at Newall Dome. 2nd mag. March 1. Decidedly red. 2nd mag. March 2. Red. Unsteady. March 3. Through clouds. Faint. March 5. Red. March 7. Through clouds. Very faint. March 12. Considerably fainter. Somewhat less than 3rd mag. March 21. About 4th mag. March 25. Not visible on the meridian in a perfectly clear sky. April 1. Clouds. About 4.5 mag.

The Observatory, Cambridge.

Further Observations of the New Star in Perseus.
By A. Stanley Williams.

The following observations of the brightness of *Nova Persei* are in continuation of those already communicated to the Society and published in *Monthly Notices*, vol. lxi. p. 337. Down to March 18 they were made with the eye aided only by ordinary concave spectacles, but after that date an opera glass was employed. The provisional magnitudes in the last column are, as before, on the H.P. scale, and on the assumption that a step is equivalent to 0.1 mag. It appears to be actually rather smaller